

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

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1. (Currently Amended) ~~An image forming apparatus for forming an image based on~~
half-tone data with a coloring agent, comprising:
 - a storage, operable to rewritably store tone correction information;
 - a tone correction section for receiving input tone level data with regard to a color system of the coloring agent, and for applying a tone correction for compensating gamma characteristic variation of the image forming device with respect to the input tone level data to generate output tone level data corrected by the tone correction, the tone correction being applied with reference to the tone correction information; and
 - a half-toning section for applying a half-toning with respect to the output tone level data to generate the half-tone data.
 2. (Original) The image forming apparatus as set forth in claim 1, wherein the number of tone levels contained by the output tone level data is greater than that of the input tone level data.
 3. (Currently Amended) The image forming apparatus as set forth in claim 1, further comprising:

~~a correction information generating section for measuring an optical density of a test~~
image printed in a test printing operation to obtain the gamma characteristics of the image
forming apparatus, and for generating tone correction information to be utilized by the tone
~~correction section~~ for rewriting the tone correction information stored in the storage.

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4. (Original) The image forming apparatus as set forth in claim 3, wherein the correction
information generating section generates the tone correction information from the optical density
of the test image by calculation.

5. (Original) The image forming apparatus as set forth in claim 3, wherein the half-tone
data is generated such that a bit number thereof assigned to one pixel of one color in the test
printing operation is greater than that in a usual printing operation for printing an image to be
appreciated.

6. (Original) The image forming apparatus as set forth in claim 3, wherein the half-toning
section applies the half-toning with a screen method using different screens in the test printing
operation and in a usual printing operation for printing an image to be appreciated, and
wherein the screen frequency of the screen used in the test printing operation is greater
than that used in the usual printing operation.

7. through 9. (Cancelled)

~~10. (Currently Amended) An image forming method applied to an image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising the steps of:~~

~~storing tone correction information rewritably in a storage;~~

~~obtaining input tone level data with regard to color system of the coloring agent;~~

~~applying, with reference to the tone correction information, a tone correction for compensating gamma characteristic variation of the image forming device with respect to the input tone level data to generate output tone level data;~~

~~applying a half-toning with respect to the output tone level data to generate the half-tone data.~~

11. (Original) The image forming method as set forth in claim 10, wherein the tone correction is applied such that the number of tone levels contained by the output tone level data is greater than that of the input tone level data.

12. (Currently Amended) The image forming method as set forth in claim 10, further comprising the steps of:

measuring an optical density of a test image printed in a test printing operation to obtain the gamma characteristics of the image forming apparatus; and

~~generating tone correction information to be utilized in the step of applying the tone correction for rewriting the tone correction information stored in the storage.~~

13. (Original) The image forming method as set forth in claim 12, wherein the tone correction information is generated from the optical density of the test image by calculation.

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14. (Original) The image forming method as set forth in claim 12, wherein the half-tone data is generated such that a bit number thereof assigned to one pixel of one color in the test printing operation is greater than that in a usual printing operation for printing an image to be appreciated.

15. (Original) The image forming method as set forth in claim 12, wherein the half-toning is applied with a screen method using different screens in the test printing operation and in a usual printing operation for printing an image to be appreciated, and
wherein the screen frequency of the screen used in the test printing operation is greater than that used in the usual printing operation.

16. through 18. (Cancelled)

19. (Currently Amended) A computer-readable recording medium for recording a program causing a computer to execute an image forming method applied to an image forming

~~apparatus for forming an image based on half-tone data with a coloring agent, comprising the~~
steps of:

storing tone correction information rewritably in a storage;

obtaining input tone level data with regard to color system of the coloring agent;

applying, with reference to the tone correction information, a tone correction for
compensating gamma characteristic variation of the image forming device with respect to the
input tone level data to generate output tone level data;

applying a half-toning with respect to the output tone level data to generate the half-tone
data.

20. (Original) The computer-readable recording medium as set forth in claim 19, wherein
the tone correction is applied such that the number of tone levels contained by the output tone
level data is greater than that of the input tone level data.

21. (Currently Amended) The computer-readable recording medium as set forth in claim
20, the image forming method executed by the program further comprising the steps of:

measuring an optical density of a test image printed in a test printing operation to obtain
the gamma characteristics of the image forming apparatus, and

generating tone correction information ~~to be utilized in the step of applying the tone~~
~~correction for rewriting the tone correction information stored in the storage.~~

22. (Original) The image forming method as set forth in claim 21, wherein the tone correction information is generated from the optical density of the test image by calculation.

23. (New) The image forming apparatus as set forth in claim 1, wherein the input tone level data and output tone level data are CMYK data.

24. (New) The image forming apparatus as set forth in claim 1, wherein the gamma characteristic variation results from ambient atmospheric conditions or aging.

25. (New) The image forming apparatus as set forth in claim 1, wherein the tone correction for compensating gamma characteristic variation of the image forming device is determined by comparing actual gamma characteristics of the image forming device with ideal gamma characteristics of the image forming device and performing a determination calculation.

26. (New) The image forming apparatus as set forth in claim 3, wherein the test image is comprised of all kinds of toners of CMYK and contains many different tone levels.

27. (New) The image forming method as set forth in claim 10, wherein the input tone level data and output tone level data are CMYK data.

~~28. (New) The image forming method as set forth in claim 10, wherein the gamma characteristic variation results from ambient atmospheric conditions or aging.~~

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29. (New) The image forming method as set forth in claim 10, wherein the tone correction for compensating gamma characteristic variation of the image forming device is determined by comparing actual gamma characteristics of the image forming device with ideal gamma characteristics of the image forming device and performing a determination calculation.

30. (New) The image forming method as set forth in claim 12, wherein the test image is comprised of all kinds of toners of CMYK and contains many different tone levels.

31. (New) The computer-readable recording medium as set forth in claim 19, wherein the input tone level data and output tone level data are CMYK data.

32. (New) The computer-readable recording medium as set forth in claim 19, wherein the gamma characteristic variation results from ambient atmospheric conditions or aging.

33. (New) The computer-readable recording medium as set forth in claim 19, wherein the tone correction for compensating gamma characteristic variation of the image forming device is determined by comparing actual gamma characteristics of the image forming device with ideal gamma characteristics of the image forming device and performing a determination calculation.

34. (New) ~~The computer-readable recording medium as set forth in claim 21, wherein the~~
test image is comprised of all kinds of toners of CMYK and contains many different tone levels.

35. (New) An image forming apparatus for forming an image based on half-tone data
with a coloring agent, comprising:

a tone correction section for receiving input tone level data with regard to a color system
of the coloring agent, and for applying a tone correction for compensating gamma characteristic
variation of the image forming device with respect to the input tone level data to generate output
tone level data corrected by the tone correction; and

a half-toning section for applying a half-toning with respect to the output tone level data
to generate the half-tone data,

wherein the number of tone levels contained by the output tone level data is greater than
that of the input tone level data.

36. (New) An image forming apparatus for forming an image based on half-tone data
with a coloring agent, comprising:

a tone correction section for receiving input tone level data with regard to a color system
of the coloring agent, and for applying a tone correction for compensating gamma characteristic
variation of the image forming device with respect to the input tone level data to generate output
tone level data corrected by the tone correction;

~~a half-toning section for applying a half-toning with respect to the output tone level data~~
to generate the half-tone data; and

a correction information generating section for measuring an optical density of a test image printed in a test printing operation to obtain the gamma characteristics of the image forming apparatus, and for generating tone correction information to be utilized by the tone correction section,

wherein the half-tone data is generated such that a bit number thereof assigned to one pixel of one color in the test printing operation is greater than that in a usual printing operation for printing an image to be appreciated.

37. (New) An image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising:

a tone correction section for receiving input tone level data with regard to a color system of the coloring agent, and for applying a tone correction for compensating gamma characteristic variation of the image forming device with respect to the input tone level data to generate output tone level data corrected by the tone correction;

a half-toning section for applying a half-toning with respect to the output tone level data to generate the half-tone data; and

~~a correction information generating section for measuring an optical density of a test image printed in a test printing operation to obtain the gamma characteristics of the image~~

forming apparatus, and for generating tone correction information to be utilized by the tone correction section, wherein:

the half-toning section applies the half-toning with a screen method using different screens in the test printing operation and in a usual printing operation for printing an image to be appreciated, and

the screen frequency of the screen used in the test printing operation is greater than that used in the usual printing operation.

38. (New) An image forming method applied to an image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising the steps of:

obtaining input tone level data with regard to color system of the coloring agent;

applying a tone correction for compensating gamma characteristic variation of the image forming device with respect to the input tone level data to generate output tone level data; and
applying a half-toning with respect to the output tone level data to generate the half-tone data,

wherein the tone correction is applied such that the number of tone levels contained by the output tone level data is greater than that of the input tone level data.

39. (New) An image forming method applied to an image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising the steps of:

obtaining input tone level data with regard to color system of the coloring agent;

~~applying a tone correction for compensating gamma characteristic variation of the image~~
forming device with respect to the input tone level data to generate output tone level data;
applying a half-toning with respect to the output tone level data to generate the half-tone data
measuring an optical density of a test image printed in a test printing operation to obtain the gamma characteristics of the image forming apparatus; and
generating tone correction information to be utilized in the step of applying the tone correction.

wherein the half-tone data is generated such that a bit number thereof assigned to one pixel of one color in the test printing operation is greater than that in a usual printing operation for printing an image to be appreciated.

40. (New) An image forming method applied to an image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising the steps of:

obtaining input tone level data with regard to color system of the coloring agent;
applying a tone correction for compensating gamma characteristic variation of the image forming device with respect to the input tone level data to generate output tone level data;
applying a half-toning with respect to the output tone level data to generate the half-tone data.
measuring an optical density of a test image printed in a test printing operation to obtain the gamma characteristics of the image forming apparatus; and

generating tone correction information to be utilized in the step of applying the tone correction, wherein:

the half-toning is applied with a screen method using different screens in the test printing operation and in a usual printing operation for printing an image to be appreciated, and

the screen frequency of the screen used in the test printing operation is greater than that used in the usual printing operation.

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Q. 41. (New) A computer-readable recording medium for recording a program causing a computer to execute an image forming method applied to an image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising the steps of:

obtaining input tone level data with regard to color system of the coloring agent;

applying a tone correction for compensating gamma characteristic variation of the image forming device with respect to the input tone level data to generate output tone level data;

applying a half-toning with respect to the output tone level data to generate the half-tone data,

wherein the tone correction is applied such that the number of tone levels contained by the output tone level data is greater than that of the input tone level data.

42. (New) The computer-readable recording medium as set forth in claim 41, the image forming method executed by the program further comprising the steps of:

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~~measuring an optical density of a test image printed in a test printing operation to obtain~~
the gamma characteristics of the image forming apparatus, and
generating tone correction information to be utilized in the step of applying the tone
correction.

43. (New) The image forming method as set forth in claim 42, wherein the tone
correction information is generated from the optical density of the test image by calculation.